(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035868 A1

(51) International Patent Classification[7]: C25C 1/00, 1/12, 7/08

(21) International Application Number: PCT/AU2003/001393

(22) International Filing Date: 21 October 2003 (21.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2002952181 21 October 2002 (21.10.2002) AU

(71) Applicant *(for all designated States except US)*: INTEC LTD [AU/AU]; Gordon Chiu Building, J01, Department of Chemical Engineering, University of Sydney, Sydney, New South Wales 2006 (AU).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: LAM, Chung, Ho [AU/AU]; 9/144 Edwin Street, Croydon, New South Wales 2132 (AU).

(74) Agent: GRIFFITH HACK; GPO Box 4164, Sydney, New South Wales 2001 (AU).

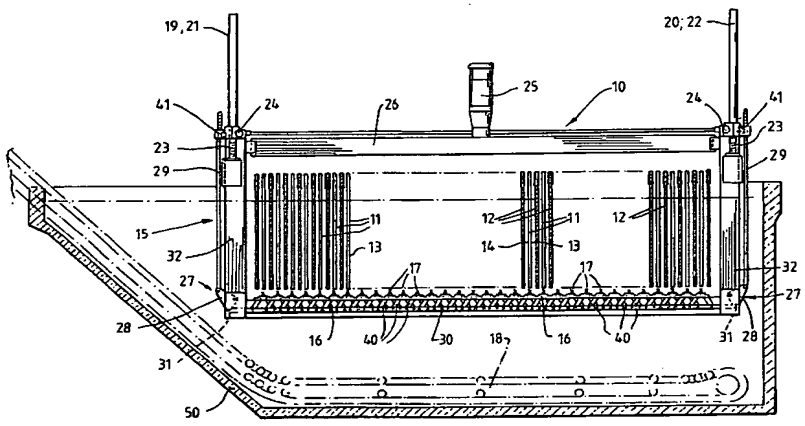
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ELECTROLYSIS PROCESS AND CELL FOR USE IN SAME




(57) Abstract: An electrolysis process for the recovery of metal from an aqueous solution is defined. On electrolysing the solution metal is caused to deposit on a deposition surface of a cathode. The process includes the step of inducing a non-uniform current density across the deposition surface so as to form areas of high current density interspaced by areas of low current density. The difference between the areas of high current density and low current density is sufficient to cause metal deposition to be concentrated on the areas of high current density so as to promote non-uniform deposition of metal across the deposition surface. An electrolysis cell for the electro-recovery of metal from an aqueous solution is also defined. The cell includes a cathode which includes a deposition surface on which metal is deposited on electrolysing of the aqueous solution. In operation of the cell, the deposition surface has a non-uniform electrical field having areas of strong electrical field interspaced by areas of weak electrical field. The difference between the areas of strong electrical field and weak electrical field is sufficient to cause metal deposition to be concentrated on the areas of high electrical field so as to promote non-uniform deposition of metal on the surface.

WO 2004/035868 A1